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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/901,378 | 07/09/2001 | Johannes-Jorg Rueger | 10191/1888 | 6581 |
| 26646 | 7590 | 01/29/2003 | | |

KENYON & KENYON
ONE BROADWAY
NEW YORK, NY 10004

[REDACTED]
EXAMINER

BUDD, MARK OSBORNE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2834 | |

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | |
|---------------------|------------------------|
| Application No. | Applicant(s) |
| 901378 | Rueger et al |
| Examiner M. Budj | Group Art Unit 2834 |

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133), term adjustment. See 37 CFR 1.704(b).

Status

Responsive to communication(s) filed on 12-17-07

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

Claim(s) 1-11

Of the above claim(s) _____ is/are pending in the application.

Claim(s) _____ is/are withdrawn from consideration.

Claim(s) 1-11 is/are allowed.

Claim(s) _____ is/are rejected.

Claim(s) _____ is/are objected to.

are subject to restriction or election requirement

Application Papers

The proposed drawing correction, filed on _____ is approved disapproved.

The drawing(s) filed on _____ is/are objected to by the Examiner

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

All Some* None of the:

Certified copies of the priority documents have been received.

Certified copies of the priority documents have been received in Application No. _____.

Copies of the certified copies of the priority documents have been received

in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

Interview Summary, PTO-413

Notice of Reference(s) Cited, PTO-892

Notice of Informal Patent Application, PTO-152

Notice of Draftsperson's Patent Drawing Review, PTO-948

Other _____

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Claim 11 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is vague and indefinite in that "during an injection" has no antecedent basis. There is no indication of where any "two detected voltage values" are obtained or what they represent. The computer is not related to the circuit in any meaningful way, it merely compares two undefined voltages in one operation and in a separate, unrelated event, responds to some threshold being exceeded. Due to the above problems one cannot determine the metes and bounds of this claim.

Claims 1-4 and 9-11 rejected under 35 U.S.C. 10(a) as being anticipated by Divljakovic and (765) and (947) and Reuger.

Each reference teaches detecting voltage in an injector to determine if it is operating properly. This is done by comparing measured values with pre-determined values via a computer program.

Claims 5-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Divljakovic (765), Rueger or Divljakovic (947).

As noted above, the references teach the basic fault detecting method but are not explicit as to shut-down of an individual injector, all injectors or the entire system. Note the piezo elements are routinely discharged as part of the normal operating cycle. The concept of shutting down a malfunctioning device (e.g. before more damage occurs) is so well known that to apply it

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to any specific machine would be within the skill expected of the routineer, -and would therefore have been an obvious conclusion to one of ordinary skill in the art as regards the operation of the Rueger or Divljakovic devices.

Regarding applicants comments, there is still no definite cooperative relationship between the piezo element, some unspecified voltage measurements and the computer. That is to say, the claim does not specify that e.g. the voltage across the piezo element is one of the measured voltages, or what the second measured voltage might represent. How can one determine the metes and bounds of a collection of unrelated parts? Also, again, what injector? There is no injector structure in the claim.

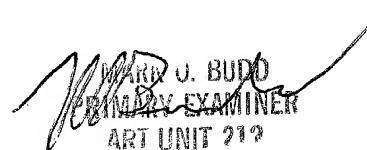
Regarding Divljakovic, the operation of a piezo injector is determined by monitoring a voltage, using this as a predetermined value, and when a later measured value is different (by comparing the two values) an “alarm” signal is sent. Note especially figs 16 & 17. While it is true that a PSD profile can also be generated, it is clear that individual voltage values are also compared.

Regarding Rueger an initial voltage value is determined and subsequent valves are “corrected” (by measuring present valve vs predetermined valve and restoring the original voltage), which is the same as generating an error signal.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



MARY J. BUDD
PRIMARY EXAMINER
ART UNIT 219

M BUDD/pj

01/27/03